**1. Introduction**

1.1. **Purpose**

The purpose of this document is to detail the requirements for the Avi system to be developed. It will describe the features, functions and interfaces of the system. This document is intended for developers of the system as this document will serve as a guideline for the development of the Avi system. It is also intended for the client(The University of Witwatersrand) and serves as an indication of what the client should expect from the developed system. The approval of this document will be interpreted as permission to go ahead with the development of the system.

1.2. **Scope**

Avi is a web application that will recommend elective courses to prospective postgraduate students and further predict the grades the students are likely to get in the recommended courses based on their grades in previously completed courses.

A student will start by creating an account which includes specifying their firstname, middle name, lastname, student number and their login password.

Once a student has created an account they can only be able to get recommendations once they have added the courses they have done, the year the course was completed along with the grade they obtained in each course. This information can be updated by the student for cases where they may have made a mistake or their mark has changed.

The student can now request to get recommendations. After requesting to get a recommendation, the student must specify the level of study they want recommendations for. After this the system will present to them the recommended courses along with the predicted grade for each course.

1.3. **Definitions, acronyms and abbreviations**

1.4. **References**

IEEE. IEEE Std 830-1998 IEEE Recommended Practice for Software Requirements Specifications. IEEE Computer Society, 1998

1.5. **Overview**

The next section, section 2, of this document gives an overview of the system’s functionality. It does not specify the requirements but rather describes the factors that affected the choice of requirements and how the system operates inside various constraints. Section 3 describes all the software requirements. It comprises of detailed and technical descriptions of the system’s functionality (i.e. inputs, outputs).

**2. Overall Description**

2.1 **Product Perspective**

The Avi system is the first of its kind at the University of Witwatersrand. It is independent and totally self contained. Currently recommendations are provided by lectures based on their observations of other students’ performance there is no formal or reliable system or methods for providing these recommendations.

\*\*\*Use Case Diagram goes here\*\*\*

2.1.1. System Interfaces

2.1.2. User Interfaces

2.1.3. Hardware Interfaces

Client Side:

The user needs a device that has internet connection and one of the browsers mentioned in the next section.

Server Side:

Since this system will not be deployed, the hardware requirements are a laptop or desktop where the system and the web server will be stored locally.

For the database, the University of Witwatersrand’s LAMP server will be sufficient

2.1.4. Software Interfaces

Client Side:

The “Avi” system can run on any browser but the preferred browsers are Firefox, Microsoft Edge and Chrome since the system will be tested on these browsers. Any user that has a device with these browsers should be able to use the system.

Server Side:

The “Avi” system will be run on the Django Framework’s server which comes with the installation of the framework. The database for data storage and retrieval will be stored on the University of Witwatersrand MySQL server LAMP.

2.1.5. Communication Interfaces

The “Avi” system uses http/https protocol for communication (over the Internet) with the MySQL database and TCP/IP for intranet communication with the backend hosted locally on a laptop or desktop.

2.1.6. Memory Constraints

Client Side:

None

Server Side:

The computer that will be storing the system locally will need enough storage to store the system. Currently the size of the system can not be determined since it has not yet been developed.

2.2 **Product Functions**